Chapter 1
Purpose, Need, and Proposed Action

Introduction

The Freds Fire was reported in the late afternoon of October 13, 2004, on the north side of Highway 50 approximately 1 1/2 miles east of the communities of Silver Fork and Kyburz, in El Dorado County. After ignition, the fire quickly spread across extremely steep slopes, burning through timber and heavy fuels. The fire burned rapidly in a westerly direction, parallel to Highway 50, driven by strong east winds. Highway 50 was closed immediately, the communities of Silver Fork and Kyburz were evacuated, and suppression efforts focused on protecting the towns and their infrastructure. The fire burned approximately 7,560 acres on the Eldorado National Forest (ENF) and on private timberlands.

The fire burned with varying intensity. Many areas of the fire burned at high and moderate intensity, killing 75%-100% of the trees and burning the duff and litter that protects the soil. In these areas, the fire resulted in high rates of soil erosion, sedimentation to streams, destruction of wildlife habitat for sensitive species, and loss of old forest. Subsequent to the fire, the ENF prepared an environmental impact statement, the Freds Fire Restoration Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), signed August 1, 2005, to address long-term fuel loading, dead tree removal, road repair and public safety (USDA 2005a). Dead and dying trees were removed from the project area during the summer and fall of 2005.

Three decision memos were prepared to replant burned Cleveland Fire plantations and to begin initial planting on a portion of the harvested areas. About 1,868 acres have been planted.

The project area for this analysis is the approximately 4,320 acre portion of the Freds Fire that is within the Placerville and Pacific Ranger District administrative boundaries of the ENF, in El Dorado County, California.

The Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA ROD, USDA 2004b) land allocations within the Freds Fire boundary include defense zone, threat zone, and general forest. In addition, there are two protected activity centers (PACs) for spotted owls; spotted owl home range core areas (HRCAs); and riparian conservation areas (RCAs) adjacent to perennial, seasonal, and ephemeral streams within the Freds Fire boundary. Highway 50 is a state designated Scenic Highway. The South Fork American River was found to be eligible as a Wild and Scenic Recreation River in 1990. A suitability study has not been completed for the river and it has not been proposed for congressional designation. In addition, the Pony Express Trail, a National Recreation and Historic Trail, bisects the project and is a linear feature that parallels Highway 50.

The goal of this project is to move the area toward desired future conditions as defined by the Sierra Nevada Forest Plan Amendment (SNFPA ROD, pgs. 36-48). Desired conditions, management intents, and management objectives for fuels and vegetation management activities within each land allocation are described in detail in Table 1-1. There is a need to develop these desired conditions over the long term in the burned areas where site capability allows. In the short term, burned areas would be managed for young forest dependent species.

Table 1-1: Land Allocations and Desired Conditions (SNFPA ROD, pgs. 45-48)

Land Allocation	Desired Conditions	Management Intent	Management Objectives
Old Forest Emphasis Areas	Forest structure and function generally resemble pre-settlement conditions. High levels of horizontal and vertical diversity exist within 10,000 acre landscapes. Stands are composed of roughly even-aged vegetation groups, varying in size, species composition, and structure. Individual vegetation groups range from less than 0.5 to more than 5 acres in size. Tree sizes range from seedlings to very large diameter trees. Species composition varies by elevation, site productivity, and related environmental factors. Multi-tiered canopies, particularly in older forests, provide vertical heterogeneity. Dead trees, both standing and fallen, meet habitat needs of old-forest-associated species. Where possible, areas treated for fuels also provide for the successful establishment of early seral stage vegetation.	Maintain or develop old forest habitat in: areas containing the best remaining large blocks or landscape concentrations of old forest and/or areas that provide old forest functions (such as connectivity of habitat over a range of elevations to allow migration of wide-ranging old-forest-associated species). Establish and maintain a pattern of area treatments that is effective in: modifying fire behavior. culturing stand structure and composition to generally resemble pre-settlement conditions. reducing susceptibility to insect/pathogen drought-related tree mortality. Focus management activities on the short-term goal of reducing the adverse effects of wildfire. Acknowledge the need for a longer-term strategy to restore both the structure and processes of these ecosystems.	Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior. Maintain and/or establish appropriate species composition and size classes. Reduce the risk of insect/pathogen drought-related mortality by managing stand density levels. Design economically efficient treatments to reduce hazardous fuels.
WUI *Threat Zones*	Under high fire weather conditions, wildland fire behavior in treated areas is characterized as follows: Flame lengths at the head of the fire are less than 4 feet. The rate of spread at the head of the fire is reduced to at least 50% of pre-treatment levels. Hazards to firefighters are reduced by managing snag levels in locations likely to be used for control in prescribed fire and fire suppression, consistent with safe practices guidelines. Production rates for fire line construction are doubled from pre-treatment levels.	Threat zones are priority area for fuels treatments. Fuels treatments in the threat zone provide a buffer between developed areas and wildlands. Fuels treatments protect human communities from wildland fires as well as minimize the spread of fires that might originate in urban areas. The highest density and intensity of treatments are located within the WUI.	Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior. Design economically efficient treatments to reduce hazardous fuels.

Land Allocation	Desired Conditions	Management Intent	Management Objectives
WUI *Defense Zones*	Stands are fairly open and dominated primarily by larger, fire tolerant trees. Surface and ladder fuel conditions are such that crown fire ignition is highly unlikely. The openness and discontinuity of crown fuels, both horizontally and vertically, result in very low probability of sustained crown fire.	Protect communities from wildfire and prevent the loss of life and property. WUI defense zones have highest priority for treatment (along with threat zones). The highest density and intensity of treatments are located within the WUI.	Create defensible space near communities, and provide a safe and effective area for suppressing fire. Design economically efficient treatments to reduce hazardous fuels.
California spotted owl and northern goshawk PACs	At least two tree canopy layers are present. Dominant and co-dominant trees average at least 24 inches dbh. Area within PAC has at least 60 to 70 percent canopy cover. Some very large snags are present (greater than 45 inches dbh). Levels of snags and down woody material are higher than average.	Maintain PACs so that they continue to provide habitat conditions that support successful reproduction of California spotted owls and northern goshawks.	Avoid vegetation and fuels management activities within PACs to the greatest extent feasible. Reduce hazardous fuels in PACs in defense zones when they create an unacceptable fire threat to communities. Where PACs cannot be avoided in the strategic placement of treatments, ensure effective treatment of surface, ladder, and crown fuels within treated areas. If nesting or foraging habitat in PACs is mechanically treated, mitigate by adding acreage to the PAC equivalent to the treated acreage wherever possible. Add adjacent acres of comparable quality wherever possible.
HRCAs	Within home ranges, HRCAs consist of large habitat blocks having: at least two tree canopy layers. at least 24 inches dbh in dominant and co-dominant trees. a number of very large (>45 inches dbh) old trees. at least 50-70% canopy cover. higher than average levels of snags and down woody material.	Treat fuels using a landscape approach for strategically placing area treatments to modify fire behavior. Retain existing suitable habitat, recognizing that habitat within treated areas may be modified to meet fuels objectives. Accelerate development of currently unsuitable habitat (in non-habitat inclusions, such as plantations) into suitable condition. Arrange treatment patterns and design treatment prescriptions to avoid the highest quality habitat (CWHR types 5M, 5D, and 6) wherever possible	Establish and maintain a pattern of fuels treatments that is effective in modifying wildfire behavior. Design treatments in HRCAs to be economically efficient and to promote forest health where consistent with habitat objectives.

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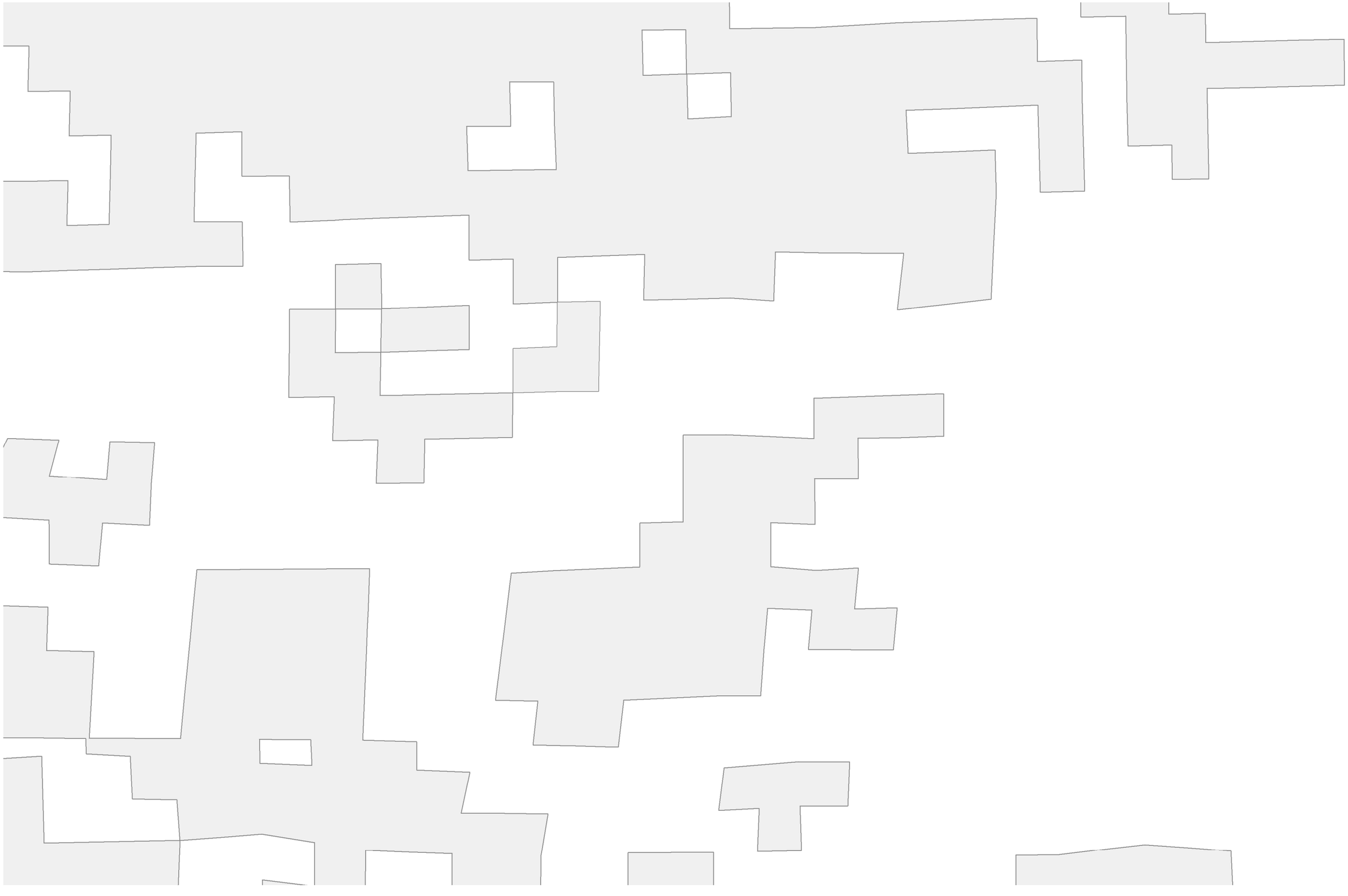

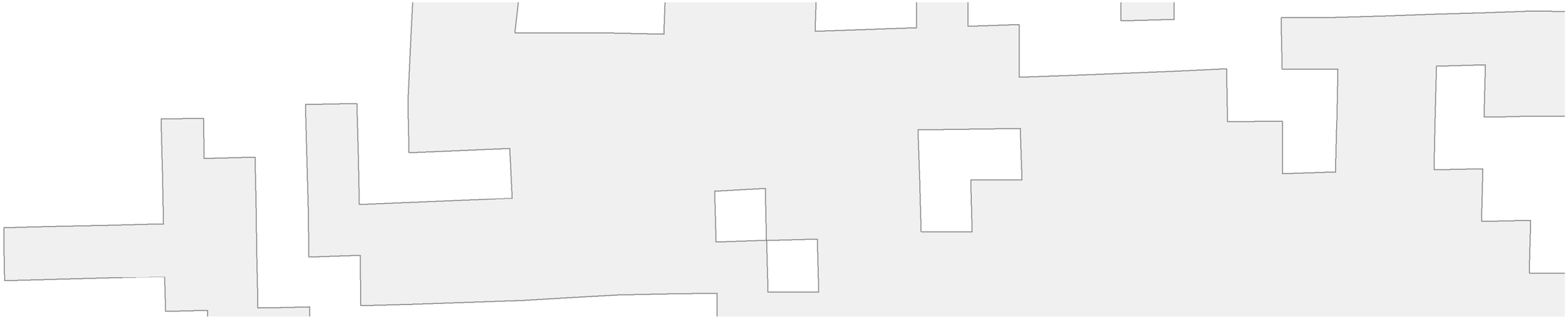

Purpose and Need for Action

The purpose and need for this project is to further the restoration of the area impacted by the Freds Fire of 2004. This fire resulted in adverse effects to forest resources such as soil, riparian areas, and wildlife habitat, and caused extensive tree mortality. Removal of most of the fire-killed trees occurred in 2005. Some live and dead trees remain, distributed across the landscape as described in the Freds Fire Restoration FEIS. Without additional treatment to restore the fire area, additional impacts are likely over the short and long term.

- There is a need to reestablish a forested landscape.
- There is a need to reestablish this forested landscape effectively and economically**.**
- There is a need to reduce short term fuels loading for the purpose of reducing the intensity and severity of future fires:
- There is a need to restore spotted owl travel corridors between owl PACs.
- There is a need to control yellow starthistle and eliminate tall white top in the project area to reduce the potential for spread of noxious weeds to other areas in the forest.

Indicator Measures, or ways to quantitatively or qualitatively gauge the effects of the alternatives in relation to a need or issue, are also identified under each need and issue.

There is a Need to Reestablish a Forested Landscape.

Reforestation programs have many objectives, such as improving timber yields, soil protection, improving visual quality, and improving wildlife habitat. One of the primary objectives of the Freds Fire Reforestation Project is to move the project area from its existing condition toward desired future conditions (Table 1-1) as defined by the Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement and Record of Decision.

As a result of the fire, much of the project area has reverted from mid- and late-seral forest conditions to early-seral conditions. It will take at least 100 years to reestablish large trees (>24" dbh) and at least 250 years to develop old trees with decadence features beneficial to wildlife (SNFPA FEIS Vol. 1, Ch. 2, pg. 138). In the lower elevations, existing oak sprouts have the potential to develop into oak stands or the oak component of mixed conifer/oak stands. Natural regeneration is sparse over the moderate and high intensity burn areas. To achieve the desired conditions described above, it is important to begin the reestablishment of a forested landscape.

The Pacific Southwest Region of the Forest Service has developed specific stocking standards for successful reforestation (R-5 FSH 2409.26b, 1991). These standards describe the specified minimum and recommended numbers of trees per acre (TPA) needed to establish a growing forest. These standards reflect the knowledge that not every seedling has the genetic potential to thrive on the micro-site they were planted in. It also requires that the seedlings be well-distributed and growing under conditions that will allow them to “persist into the future” .

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Planted trees encounter many barriers to establishment early in their life and cannot be considered established or expected to persist into the future upon planting. Initial tree planting has occurred on about 1,870 acres, however, the seedlings have not been established. Seedling mortality is high, the result of lack of adequate moisture, with third year seedling survival at about 40 percent, and declining. Thus, reforestation success needs to be evaluated after trees are established, and when there is reasonable assurance that seedlings will persist in the expected future under prescribed management practices. Certification for adequate stocking can take place after three years or anytime thereafter that established seedlings meet the regional certification requirements. (R-5 Reforestation Handbook).

Forest cover is not necessary over the entire landscape to meet desired future conditions. Forested cover is not desirable or may not be achievable on areas such as archaeological sites, sensitive plant areas, poor sites and rock outcrops. In addition, small inclusions without trees in other areas provide for structural and vegetative diversity.

Indicator Measure: Acres certified with adequate stocking by age five to ten.

There is a Need to Reestablish this Forested Landscape Effectively and Economically

There is a need to effectively and economically control the establishment and growth of shrubs and other competing vegetation that could persist for the long term, negatively affecting both planted and natural seedling survival and inhibiting tree growth, delaying the achievement of the SNFP desired condition.

In the short term there is a need to insure that sufficient young seedlings of a variety of species survive and grow, to provide for the future attainment these desired conditions. Controlling competing vegetation directly influences the attainment of these objectives by enabling sufficient young conifer seedlings of a variety of species to survive long moisture free summers; and by reducing moisture stress on surviving conifer seedlings so that they grow more vigorously.

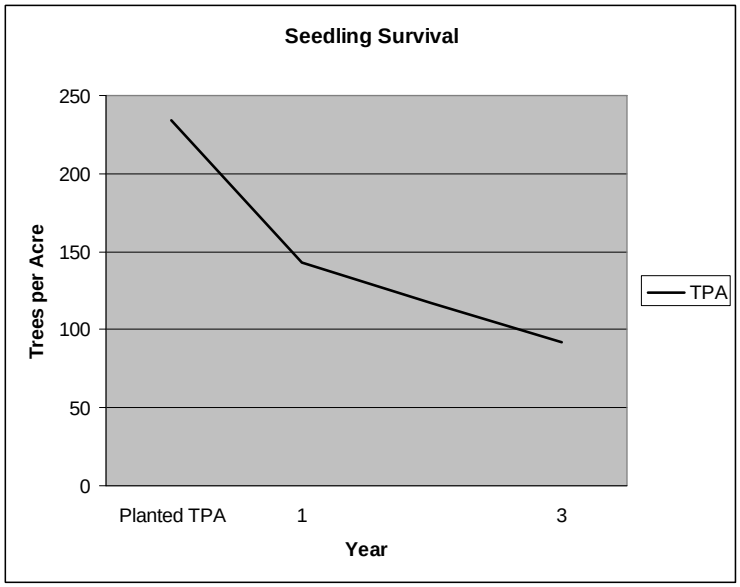
The Forest Service in Region 5 has extensive experience, a large body of research and numerous long-term studies (ranging from 10-31 years) that clearly establish the efficacy of herbicide release to improve conifer survival, growth and development. According to the findings of the National Administrative Study: Alternatives Methods of Release, herbicides far more cost-effective than hand grubbing or hand cutting, and yield the longest-lasting results on established shrubs (Abstracts of presentations, 26th Forest Vegetation Management Conference, 2005). Prior

> *control of competing vegetation is needed in the commercial timber lands of the Region* [including the Eldorado National Forest].

While the above statement was primarily made regarding a timber yield objective, when seedling survival and growth are needed to accomplish other objectives, a seedling's physiological needs for sunlight, soil moisture and nutrients, and space remain the same. As a practical measure, a short-term silvicultural goal is to keep competing vegetation levels below twenty percent (total live ground cover) for a period of two to three years after planting. This objective is based on plantation studies in California which have shown that levels below 20-30 percent crown cover are necessary to maintain seedling survival and growth (refer to McDonald and Fiddler, 1989).

Currently the establishment of grasses, shrubs, and other vegetation, while variable, averages 65 percent cover over the analysis area. Establishment of greater than 20 to 30 percent cover of vegetation presents a potential lethal environment to conifer seedlings as demonstrated by current third year seedling survival rates of 40 percent (refer to Figure 1-1).

Figure 1-1 Freds Fire Seedling Survival



Each unit on the project was evaluated and a Release Evaluation Form was completed. The Release Evaluation Form was developed on the ENF in 1991 by a group of certified silviculturists and culturists as a method to evaluate plantations as to the need for herbicides as a release tool, and to prioritize the need for release. A key component of the Release Evaluation Form is to identify vegetative situations where the use of herbicides is considered essential to meeting the objective of successful reforestation. The evaluation as to the need for herbicides in a given unit is based upon factors such as competing species, stocking of conifer seedlings, relationship between conifer condition and competing vegetation condition, and the presence or absence of pocket gophers. This evaluation and risk-rating system is further discussed in the instructions for the Release Evaluation Form in Appendix B – Silvicultural Information.

Each unit has been assigned to one or more situation categories on the Release Evaluation Form. If a unit currently meets the criteria for a situation this was noted. If a unit did not currently meet the criteria for a situation, but is predicted to meet a situation in the near future, based on current vegetation and predicted growth, the situation and the predicted date of meeting the situation was noted. Based on the situation and other criteria, such as surviving trees per acre and the presence of pocket gophers, each unit has been assigned a priority for treatment.

There are six identifiable situations described in the Release Evaluation Form where the use of herbicides is considered essential to meeting the objective of successful reforestation. Briefly, these six situations are:

Bearclover/grass: Both types of vegetation (bearclover and/or annual or perennial grasses) are very competitive with conifers for water and nutrients, and are difficult to control, often with very poor results in terms of conifer release. Bearclover is not a fast invader, but grasses are, therefore when bearclover is eliminated, grasses generally reinvade.

Lupine, grasses, forbs, thistle and/or bracken fern in association with pocket gophers: The challenges facing conifers in this situation are twofold. As the plant population increases, the pocket gopher population also increases. Conifer survival drops off quickly due to both mortality from pocket gopher damage and moisture stress.

Chinquapin and/or greenleaf manzanita: Both chinquapin or greenleaf manzanita species are difficult to control, especially once established on a site. Manzanita is a fast invader, chinquapin is not.

Low conifer stocking with competition: In plantations with stocking below recommended regional standards (otherwise known as marginal stocking), competition is especially critical because of the chance of plantation failure with continued mortality. There is also a need for effective site preparation for interplanting (or replanting) efforts. For this project 100 trees per acre is used as a measure of marginal stocking.

High volume of woody brush: Even though the individual species of competing vegetation may not be considered highly competitive, the sheer number and volume of competing vegetation presents a difficult control situation and a potentially lethal combination to the conifer. Some species are difficult to control (such as chinquapin), others are difficult to adequately treat using hand methods of control when found in dense stands (such as whitethorn).

High levels of herbaceous vegetation: High levels of herbaceous vegetation is often difficult to control for any length of time due to its ability to rapidly reinvade.

Any unit that doesn't fit into one of the above categories is considered currently feasible for mechanical or hand treatments (such as hand cutting or grubbing treatments), although herbicides might still be prescribed due to the potential for these units to become classified under one of the described scenarios, even after mechanical or hand treatments. Most of the units contain elements of many of the above release need situations, either scattered over an entire unit or as inclusions within a unit.

Of the primary competitive species, bearclover, the grasses, lupine, chinquapin, and bracken fern are very difficult to control at any age, whereas deerbrush , bitter cherry, and manzanita present control problems once they become established (based on regional and local experience). Bearclover, grasses, and manzanita are considered plants able to compete very successfully against conifers and dominate a site. The *ceanothus* species and bitter cherry are considered less of a competitor then those previously mentioned, however in large numbers, these species can also dominate a site (refer to Appendix B, of the FEIS for Vegetation Management for Reforestation).

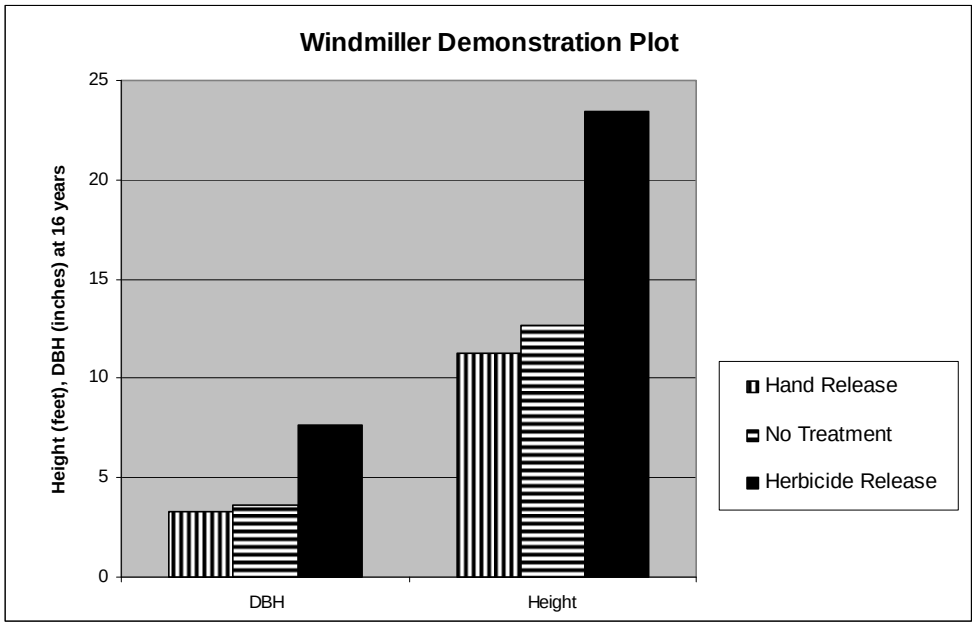
Examination of the areas planted in the project area indicate that adequate survival and growth are threatened by competing vegetation. Management of competing vegetation is essential to assure continued survival and growth of the remaining conifers and to allow planting /interplanting in units currently not meeting the stocking levels needed (100 TPA) to meet desired future conditions.

Indicator Measure: Acres with competing vegetation levels below twenty percent (total live ground cover) for a period of two to three years after planting.

Competing vegetation also greatly affects tree growth rates. Control of competing vegetation would increase conifer growth rates. Increased growth would accelerate the development of key habitat and old forest characteristics and reduce the risk of loss to wildland fire (SNFP ROD, page 49). A study near Mt. Shasta (USDA, 1997), measured the growth of planted trees during the 31 year study and found statistically different height and diameter values for each of the four shrub density regimes (no, light, medium, and heavy shrub). The average tree height after 31 years in the no shrub category was almost 3.4 times that of the "heavy shrub" average tree height, while the average tree height in the light shrub category was about 2 ½ times that of the "heavy shrub" average tree height. Similarly, the no shrub average tree diameter was almost 3.7 times that of the "heavy shrub" environment, and the light shrub average tree diameter was about 2.8 times that of the "heavy shrub" environment. The study concluded that after 31 years, the differences in tree height were still widening.

Trees were measured on a 16-year old local field demonstration plot in the Cleveland Fire near the Freds Fire (Figure 1-2). Trees in the demonstration plot, representing herbicide, hand release, and control plots, were measured. Both herbicide and hand release plots received two release treatments. The plot where trees were released with herbicides, were much taller and had a larger DBH than both the control plot and the plot where trees were hand released.

Figure 1-2. Tree Height and Diameter from Two Treatments and No Treatment



Annual height growth of planted conifers in the Freds Fire, measured on several representative units, ranges from about 0.3 feet to 0.5 feet per year, while total tree height averages about 0.75 feet on one year old trees to about 1.7 feet for three year old trees, well below the potential for this site.

Indicator Measure - Growth (height and diameter) at age 15 and 50

There is a need to reestablish this forested landscape economically. Treatments proposed include invasive plant treatments, site preparation, planting, interplanting, release, and mastication. Costs vary by the method of treatment, and the number of times a treatment must be repeated. Not only do herbicide methods cost less than hand release/hand cutting methods, but they typically do not need to be repeated as many times. Additional treatments, such as replanting or interplanting because of plantation failure, increase per acre and total costs.

Indicator measure - Cost (per acre and total)

There is a Need to Reduce Short Term Fuels Loading for the Purpose of Reducing the Intensity and Severity of Future Fires

As a result of the Freds Fire, surface fuel loading was reduced to very low levels in areas where the fire intensity was moderate to high. The ensuing establishment of grasses, shrubs, and other vegetation is expected to reach high levels (70 to 90 percent cover) within two to three years.

Establishment of this brush cover over large areas would increase the ability of wildland fires to become large in the future (> 25 years) as the dead component in the vegetation increases. Vegetation development influences potential fire behavior. Immediately post fire (< 5 year) vegetation is dominated by grass followed by a grass/shrub model (5 to 10 years, near future). These types of vegetation develop fires with high rates of spread, but little resistance to control. After this period woody brush will begin to dominate a majority of the area. The young brush, with small diameters and lack of a dead material component, tends to hinder fire intensity and spread for a 10 to 25 year period. After about 25 years (the future), as the dead component of this

size due to this fuel models' rapid reaction to environmental conditions (increased nighttime humidity) and increased line production rate possible in this fuel model. The St Pauli Fire demonstrates the effectiveness of the fuel treatments implemented in the Cleveland fire area.

Fire behavior modeling of timber stands and fuel types that are representative of potential conditions in the future indicates that high intensity fire with rapid rates of spread and high resistance to control would be likely under moderate weather conditions (temperatures above 80 degrees, light winds, and relative humidity less than 25%). Without additional treatments to reduce brush and other vegetation, and decrease resistance to control, large and difficult to control wildfires will once again threaten the residents of Silverfork and Kyburz, and the other private landowners in this area.

Indicator measure - Flame lengths in 90^{th} percentile weather conditions.

Indicator measure - Percentage of the area in grass or grass/shrub fuel model

There is a Need to Restore Spotted Owl Travel Corridors Between Owl PACs

The Freds Fire burned at high and moderate severity in over 70 percent of the project area. This resulted in high levels of tree mortality destroying habitat for spotted owls. Currently early seral vegetation exists in the project area, which hinders spotted owl movement between protected activity centers (PACs). Restoring linkages between neighboring PACS would allow for owl dispersal, and would include contiguous habitat of larger trees with moderate to high canopy cover where site conditions allow.

Indicator measure - Years to achieve spotted owl foraging and nesting habitat as described by California Wildlife Habitat Relations (CWHR) types 4M/4D/5M/5D, where site conditions allow.

There is a need to contain and control yellow starthistle and eliminate tall white top in the project area to reduce the potential for spread of these invasive plants to other areas of the Forest

The SNFP ROD (page 36) states that the goals for noxious weed management are to manage weeds using an integrated weed management approach including: prevent the introduction of new invaders, conduct early treatment of new infestations, and contain and control established infestations. Two invasive plants are known to occur in the project area; yellow starthistle and tall whitetop.

Tall whitetop occurs in one location in unit 609-41; It occupies less than ¼ acre. There is a need to conduct early treatments of this small infestation of tall whitetop, to eliminate it from the project area.

Yellow starthistle is established along and outward up to 100 feet from some Forest roads (11N38, 11N38A, 11N38G, 11N38K, 11N42, and 11N42D) and unnamed trails in Units 609-33 and 613-6, 7, 22, 25, 26, 35, 37, 38, and 47, occupying 72 gross acres in the project area. There is a need to contain and control the established infestation of yellow starthistle to reduce the potential for spread of yellow starthistle to other areas of the Forest.

Indicator measure – Containment of current yellow starthistle population or decreasing in size

Indicator measure - Elimination of tall whitetop population

Proposed Action

The Placerville Ranger District of the ENF proposes to plant trees, perform chemical and manual treatments to ensure their survival and growth and reduce fuels, and control or eliminate invasive plants using chemical and manual methods, consistent with other objectives, on approximately 3,320 acres of the area burned in the Freds Fire as described in detail in Chapter 2. Approximately 1,000 acres of the fire area on National Forest System lands are not proposed for treatment in this EIS.

The Interdisciplinary Team (IDT) used aerial photos and field sampling to determine areas in need of reforestation. Large areas of contiguous low intensity burn are excluded from any proposed action. Other areas of the fire excluded from the proposed action are PAC "core" areas, large patches of dead and dying trees, and rock outcrops.

Compliance with the ENF Land and Resource Management Plan as amended by the SNFPA Standards and Guidelines

Following are the Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA ROD Final Supplemental Environmental Impact Statement) standards and guidelines applicable to this proposal and a discussion of how they were addressed in developing the proposed action:

Where young plantations (generally Pacific Southwest Region size classes 0x, 1x, 2x) are included within area treatments, apply the necessary silvicultural and fuels reduction treatments to: (1) accelerate the development of key habitat and old forest characteristics, (2) increase stand heterogeneity, (3) promote hardwoods, and (4) reduce risk of loss to wildland fire (SNFPA ROD, pg. 49).

Promote shade intolerant pines (sugar and Ponderosa) and hardwoods (SNFPA ROD, pg. 52).

Include hardwoods in stand examinations. Encourage hardwoods in plantations. Promote hardwoods after stand-replacing events. Retain buffers around existing hardwood trees by not planting conifers within 20 feet of the edge of hardwood tree crowns (SNFPA ROD, pg. 53).

Follow the designations for riparian conservation areas (RCA) in the SNFPA as shown in Table 3 (SNFPA ROD, pg. 42):

Table 1-2 -SNFPA RCA Designation based on Stream Type

Stream Type	Width of RCA
Perennial streams	300' each side, measured from bank full edge
Seasonally flowing streams	150' each side, measured from bank full edge
Streams in inner gorge	Top of inner gorge
Special aquatic features	300' from edge of feature or riparian vegetation, whichever is greater
Other hydrologic or topographic depressions without defined channel	RCA width and protection measures determined through project level analysis

Within RCAs, the type and level of management is determined by assessing how proposed activities measure against the Riparian Conservation Objectives (RCOs) and their associated standards and guidelines (refer to SNFP ROD 62-66).

Limit pesticide applications to cases where project level analysis indicates that pesticide applications are consistent with riparian conservation objectives(SNFPA ROD, pg. 63)

Within 500 feet of known occupied sites for the California red-legged frog, Cascades frog, Yosemite toad, foothill yellow-legged frog, mountain yellow-legged frog, and northern leopard frog, design pesticide applications to avoid adverse effects to individuals and their habitats (SNFPA ROD, pg. 42).

Use screening devices for water drafting pumps….Use pumps with low entry velocity to minimize removal of aquatic species, including juvenile fish, amphibian egg masses and tadpoles, from aquatic habitats (SNFPA ROD, pg. 64).

As part of project planning, conduct a noxious weed risk assessment to determine risks for weed spread associated with different types of proposed management activities (SNFPA ROD, pg. 55).

Consult with American Indians to determine priority areas for weed prevention and control where traditional gathering areas are threatened by weed infestations (SNFPA ROD, pg. 55).

As outlined in the Regional Noxious Weed Management Strategy, when new, small weed infestations are detected, emphasize eradication of these infestations while providing for the safety of field personnel (SNFPA ROD, pg. 55).

Following are the Eldorado National Forest Land and Resource Management Plan (USDA 1989a) standards and guidelines applicable to this proposal.

Management Practice 73 - Artificial Stand Establishment

...reduce competing vegetation to insure stand reestablishment of conifers, but accept some competing brush and oaks. Reduce surface ground cover to permit successful artificial regeneration while meeting soil protection standards. Apply hand, mechanical and chemical treatments.

Management Practice 77 - Release and Weeding

Manage conifer stocking and control competing vegetation. Maintain conifer height and diameter growth commensurate with site, as per appropriate yield tables. Use all available release and weeding methods.

Decision to be Made

The Deciding Officer will decide whether to adopt and implement the proposed action, an alternative to the proposed action, or take no action to reforest areas damaged by the Freds Fire in the project area.

The proposed action is consistent with the Eldorado National Forest Land and Resource Management Plan as amended by the Sierra Nevada Forest Plan Amendment Record of Decision.

Public Involvement

The Notice of Intent to prepare an Environmental Impact Statement was published in the Federal Register April 13, 2006. It included an announcement of a Freds Fire Reforestation public meeting, on May 9, 2006. A brief description of the location and type of project was included in the ENF Schedule of Proposed Actions (SOPA) in July 2006. Approximately 74 letters were mailed out to adjacent property owners; potentially affected businesses; federal, state, and local agencies; and special interest groups. The letter contained the detailed proposed action, map, methods for participation, and an invitation to a Freds Fire Reforestation open house, on May 24, 2006. The mailing list is included in the project record. Approximately seven people attended

either the public meeting or open house, including local residents and adjacent property owners. Meeting notes are included in the project record. Five individuals responded with comments at the meetings or to the scoping. Significant issues were raised and an alternative to the proposed action were developed.

The Notice of Availability of the Draft Environmental Impact Statement (DEIS) was published in the Federal Register September 11, 2009 (Vol. 74, No. 175) and copies of the DEIS/project summary mailed to 43 individuals, organizations, tribes, and government agencies. The comment period ended on October 26, 2009. 19 individuals responded during the comment period. Two comments were received from federal, State, and local agencies, and elected officials. Appendix F contains the comments letters and Appendix G contains the response to comments.

Consultation with Indian Tribes and interested Native Americans has been ongoing throughout the planning process. Phone calls and correspondence have been made with Federally recognized tribes (Washoe Tribe of Nevada and California and Nevada, and the Shingle Springs Rancheria), and non-recognized tribes and groups.

Issues

An issue is a point of debate, dispute, or disagreement regarding anticipated effects of the proposed action. Issues may be "significant" or "non-significant." Issues may be non-significant for any of four reasons: 1) the issue is outside the scope of the proposed action; 2) the issue is already decided by law, regulation, or Forest Plan; 3) the issue is irrelevant to the decision being made; or 4) the issue is conjectural and not supported by scientific or factual evidence. Significant issues are used to develop reasonable alternatives to the proposed action that respond to the argument or controversy presented in the issue and substantially accomplish the purpose and need. All the issues and scoping comments from the public are displayed and addressed in the Project File.

The following discussion documents the significant issues (developed from scoping comments) that led to the development of alternatives to the proposed action.

Several members of the public cited the paper "Wildfire and Salvage Logging; Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West," R.L. Beschta et al. 1995, and the statement in that paper, "The use of pesticides, herbicides and fertilizers should generally be prohibited. Spot-specific hand application of herbicides only for the removal of exotics may occasionally be considered if there is evidence that such action is likely to lead to long term reclamation of the site" in support of their concerns regarding the use of pesticides.

Both the No Action Alternative (Alternative 2) and Alternative 3, included under Alternatives Considered in Detail (Chapter 2), meet the intent of the Bestchta report to generally prohibit pesticides. No pesticides are proposed for use under these alternatives.

Some members of the public questioned whether there is a need to do anything at all to promote reforestation of the Freds Fire Area, asserting that the need for the project does not exist as an ecological necessity, but only for plantation and timberlands needs. They assert that "the forest should be given a chance to regenerate naturally" or that "reseeding and replanting efforts are all the Forest really needs to be considering." They further state that, although stand replacing fires were anything but typical in pre-European times, stand replacing fires did occur and the landscape was allowed to recover slowly over time. Finally, they assert that the naturally recovering forest after wildfire, is the rarest type of forest today and will provide the most value for wildlife for 30 years. The No Action Alternative is included under alternatives considered in detail and responds to this issue.

After reviewing the public scoping comments, the Deciding Officer approved the following significant issues to generate alternatives:

Proposed use of herbicides represents an unknown or unacceptable risk to humans, wildlife, and the environment. Some individuals expressed concern about the risks associated with the proposed pesticide use to workers and the general public, including Native American plant gatherers. They are very concerned with the hazards created by pesticides in regards to native plants, including culturally important plants and rare and listed flora, amphibians, birds, fish, insects, and soil microorganisms. They suggested the project should contain analysis of a non-chemical Integrated Pest Management (IPM) alternative.

Alternative three was created to address this concern. Alternative three proposes hand planting of conifer seedlings, hand grubbing/cutting of vegetation in a 4-5 foot radius around planted seedlings, hand pulling/cutting/tarping of invasive plants, and mechanical fuel treatments of shrubs after 5 years.

Indicator Measure: Risk to human health and safety, based primarily on Hazard Quotients (HQ), measured by comparing the estimated level of exposure (dose) to the Reference dose (RfD) or some other index of acceptable exposure.

Indicator Measure: Risk to wildlife, aquatic, and plant species, based primarily on Hazard Quotients (HQ), measured by comparing the estimated level of exposure (dose) to the No Observed Effects Level (NOEL), No Observed Effect Concentration (NOEC) or some other index of acceptable exposure.

Proposed use of herbicide would leave standing dead brush that would pose an immediate fire hazard. Some members of the public were concerned that following herbicide application, much of the existing plant material will die-off and result in substantial dead organic matter on site. This presents a significant fire danger. If the vegetation is left standing, it will become significantly dry and pose an immediate fire hazard. In addition, they are concerned that dead shrubs left standing after spraying, combined with expected cheatgrass proliferation due to herbicide spraying, will mean increased risk of large stand replacing fires that may wipe out reforestation groups and plantations, rendering this project a waste of time and tax payer money. The dead brush, and expected proliferation of cheatgrass and other invasive grasses, could result in fires that would kill the planted seedlings. They suggested an alternative that included cutting unwanted brush, either mechanically, or by hand, leaving it on the ground to discourage new brush growth and noxious weed invasion, and restocking the area the following planting season.

Alternative 3 was created to address this concern. Alternative 3 proposes hand planting of conifer seedlings, hand grubbing/cutting of vegetation in a 4-5 foot radius around planted seedlings, and hand pulling/cutting/tarping of invasive plants, and mechanical fuel treatments of shrubs in 5 years.

Indicator Measure: Fuel model in immediate future (< 5 years)

Proposed herbicide use could contaminate water. Some members of the public were concerned about the potential of the proposed action to contaminate water and its effect on water quality.

Alternative 3 was created to address this concern. Alternative 3 proposes hand planting of conifer seedlings, hand grubbing/cutting of vegetation in a 4-5 foot radius around planted seedlings, hand pulling/cutting/tarping of invasive plants, and mechanical fuel treatments of shrubs in 5 years.

Indicator Measure: Levels of herbicides that may be detected in water compared to existing guidelines.

Proposed use of herbicides could create conditions more hospitable to invasive species and undesirable weeds than were present before the chemicals were applied. McDonald and Everest

(1996) found that invasive cheatgrass populations, not observed in the study plots at the beginning of a study, increased more in herbicide-treated plots during a vegetation management study comparing herbicides and non-chemical means of reducing unwanted shrubs. Herbicide treated plots ended the four year study with 743,667 cheatgrass plants per acre with 22% foliar cover, where cheatgrass was 6 times greater in number of plants and more than seven times greater in foliar cover than in the non-herbicide control plots (130,300 plants per acre, 3% foliar cover). It appears that the invasive cheatgrass was colonizing ground cleared by herbicides. They suggested the project should contain analysis of a non-chemical IPM alternative.

Alternative 3 was created to address this concern. Alternative 3 proposes hand planting of conifer seedlings, hand grubbing/cutting of vegetation in a 4-5 foot radius around planted seedlings, hand pulling/cutting/tarping of invasive plants, and mechanical fuel treatments of shrubs in 5 years.

Indicator Measure: Risk of increasing the spread of invasive plants in the project area.